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In an attempt to find a suitable system for reducing the time span in handling referred information and interlibrary loan requests from public libraries in South Carolina, the State Library Board conducted a three-month experimental demonstration with the Xerox Magnavox Telecopier, a telefacsimile communication device. The demonstration, financed with funds from Title III of the Library Services and Construction Act, involved a triangular link-up among the State Library Board, the Charleston County Library and the Greenville County Library. It is concluded that the quality of the telefacsimile communication was excellent, and no difficulties were encountered with the operation of the machine. The excessive cost for maintaining and using the Telecopier network, however, makes it prohibitive for use in the present system in South Carolina, and it is noted that commercial telephone communication would suffice for handling urgent requests for books and information. The relatively infrequent use made by the two county libraries of the Telecopier during the actual on-the-job experimental demonstration renders the maintenance of this telefacsimile communication system impractical at the present time in South Carolina's statewide referral system. Appendixes include the operating policy, evaluation sheet, operation steps, and information on length of transmission and materials transmitted. (Author/JB)

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TELEFACSIMILE COMMUNICATION WITH
THE XEROX MAGNAVOX TELECOPIER IN
REFERENCE AND INTERLIBRARY LOANS:

A Report of a Three-Month Experimental Demonstration Conducted by
the South Carolina State Library Board in Cooperation with the
Charleston and Greenville County Libraries. A Title III, LSCA
Project.



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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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July, 1967

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TELEFACSIMILE COMMUNICATION WITH THE XEROX MAGNAVOX TELECOPIER

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ABSTRACT

In an attempt to find a suitable system for reducing the time span in handling referred information and interlibrary loan requests from public libraries in South Carolina, the State Library Board conducted a three-month experimental demonstration with the Xerox Magnavox Telecopier, a telefacsimile communication device.

The demonstration, financed through funds made available by Title III of the Library Services and Construction Act, involved a triangular link-up among the State Library Board, the Charleston County Library and the Greenville County Library.

Beginning with background information and an account of the development and procedures of the reference and interlibrary loan service in South Carolina, this report presents a general description of the experimental demonstration. Also provided is information on the Telecopier equipment and methods of operation. A detailed analysis of the average cost of a reference transaction with Telecopier and a projected one-month cost study based on data and findings gathered in the demonstration are also included.

The report concludes that the quality of the telefacsimile communication was excellent and that practically all material transmitted was legible. No difficulties were encountered with the operation of the machine. The excessive cost for maintaining and using the Telecopier network, however, makes it prohibitive for use in the present system in South Carolina, and it is noted that commercial telephone communication would suffice for handling urgent requests for books and information. The relatively infrequent use made by the two county libraries of the Telecopier during the actual on-the-job experimental demonstration renders the maintenance of this telefacsimile communication system impractical at the present time in South Carolina's statewide referral system.

I BACKGROUND OF THE EXPERIMENTAL DEMONSTRATION

A. Reference and Interlibrary Loan Service

The South Carolina State Library Board's reference and interlibrary loan service is provided for public libraries of the state. During fiscal year 1966/67, a total of 6,530 volumes were circulated on interlibrary loan from the State Library Board's interlibrary loan book collection. These books were sent to public libraries in response to requests. During the same period, 1,522 reference questions were referred to the State Library Board by public libraries. These questions originated from inquiries at the local level, where they could not be answered in available library resources. In addition to books and information, the State Library Board filled 485 requests for photocopies from periodicals, serials, and books.

B. Reference and Interlibrary Loan Transaction Procedure

Most requests for books and information received by the State Library Board are sent on request cards which have been printed and distributed to public libraries. Two types of request cards are used--a book request card, on which libraries are required to list all available bibliographic information; and a subject request card, on which the request is stated along with any additional information that might be of help in answering the inquiry. These cards are sent through the mail, and, because of Columbia's centralized geographic location, mail service from public libraries in municipalities over the state to the State Library Board is quite fast. Normally, a time lapse of from 2.5 to 3 days can be expected from the mailing of a request from a public library to the receipt of the needed book or information.

C. Need for Faster Communication to Fill Urgent Requests

Libraries are from time to time faced with the problem of obtaining from the State Library Board's Reference and Interlibrary Loan Service books or information for a patron who is in urgent or immediate need. The State Library Board has for some time been considering possible faster and more accurate methods of communicating both requests and answers to inquiries to and from its reference and interlibrary loan headquarters. It is reasonable to assume that most library patrons at the local level are in more or less immediate need of the books or information which they have requested from their local public library; however, it is also apparent that many of the requests could not be classified as urgent. A delay or waiting period of from 2 1/2 to 3 days (the period required to obtain needed books or information from the State Library Board) is not deemed to be unreasonable in filling these requests. On the other hand, it was felt that some method, less time-consuming than the regular mail service, was needed to handle requests for books and information urgently or immediately needed. The ordinary commercial telephone had been used from time to time; however, the element of error in voice telephone communications presented a problem, particularly in relaying by voice information of detailed or highly technical nature. Some method of transmitting typed requests and printed answers to inquiries between libraries was needed as a faster alternative to the usual method of mailing books and information through Post Office channels. It was decided that the Xerox Magnavox

Telecopier, a relatively new electronic device for facsimile transmission, would be tested. Reports from other libraries using the machine indicated that the Telecopier might be the answer to our communication requirements for speed and accuracy in reference and interlibrary loan transactions. 3

D. Xerox Magnavox Telecopier

The Xerox Magnavox Telecopier is an innovation for facsimile transmission communications. It is both a transmitter and a receiver: it transmits and receives exact copies of anything printed, drawn, written, typed, or photocopied. Attached to ordinary telephone equipment, the Telecopier permits the transmission of written, typed or printed communication and documents between libraries in a matter of minutes. Communications between any two stations having corresponding Telecopier units can be accomplished regardless of the distance as long as both parties or institutions are connected by a single voice-grade telephone line. Only one document or sheet of paper can be accommodated at a time by the Telecopier, and the written, printed, or typed, etc., material which is to be transmitted must be on a single sheet of paper. The machine will not copy directly from a book; however, a photocopy can be made of a book page. The photocopy can be transmitted via the Telecopier.

I GENERAL DESCRIPTION OF THE EXPERIMENTAL DEMONSTRATION

A. Telecopier Locations

The two largest public libraries in South Carolina, the Charleston County Library and the Greenville County Library, and the State Library Board were involved in the experimental demonstration with the Xerox Magnavox Telecopier. The State Library Board was the base of operations or the library to which requests for books and information were sent. Distances involved were Columbia-Greenville, 94 air miles, and Columbia-Charleston, 98 air miles. One Xerox Magnavox Telecopier was installed at each of these three locations (see page 4 for map).

B. Time Schedule

The experimental demonstration was conducted during a 67-working day period which began on April and ended on July 17, 1967. In order to facilitate smooth operation of facsimile communication over the Telecopier, an operating time schedule was prepared (see Appendix I, page 15).

C. Telephone Line Facilities

No special arrangements had to be made for telephone lines for use during the three-month experimental demonstration. Most state agencies in South Carolina are under the Centrex System with WATS (Wide Area Telephone Service), which is perhaps the most modern, efficient, and economical telephone communication service available. When the State Library Board placed a long-distance call to either the Charleston or Greenville County Library, the call was made through the Centrex Service, which in turn, connected the line to WATS. The WATS telephone line is leased by the State of South Carolina. Because of direct dialing and the availability of the WATS line, no problem was encountered during the experimental demonstration with switchboards and telephone operators. The procedure for setting the Telecopiers



MAP OF SOUTH CAROLINA SHOWING LOCATION OF
THREE XEROX MAGNAVOX TELECOPIERS USED

in motion between the State Library Board and the two libraries in the experiment was as simple as placing a call to a neighbor. Calls placed from the two libraries to the State Library Board came over non-leased lines, however.

D. Procedures Used During the Experimental Demonstration

In order to test the capabilities and limitations of the Telecopier, an "Operating Policy", which is provided in this report as Appendix I, was prepared by the State Library Board and distributed to the two libraries involved in the triangular link-up.

II. DESCRIPTION OF THE EQUIPMENT

A. Hardware

The Xerox Magnavox Telecopier, manufactured by the Magnavox Corporation is marketed by the Xerox Corporation. The Telecopier system actually consists of two units, a transceiving unit and a telephone coupler unit. Both of these units are needed at each station of operation.

The transceiving unit is relatively small and portable, and is somewhat 5 comparable in bulk to an electric typewriter. It measures 11" in height, 18" in width, and 15" in length. The power supply for the Telecopier is provided from an ordinary electrical 110 volt AC outlet. In order to install the Telecopier, the extension cord provided is plugged into the outlet. The transceiving unit's component part is the telephone coupler onto which the ordinary telephone handset is placed (once initial telephone contact has been established) in order to begin transmitting or receiving. The telephone coupler is attached to the transceiving unit by an electrical cord. Its size is approximately four and three-quarter inches in height, four and a-quarter inches in width, and ten and three-quarter inches in length. The transceiving unit and the telephone coupler properly linked in with an ordinary voice-grade telephone line comprise the necessary components for transmitting and receiving facsimiles.

B. Software

Input may consist of items within the required dimensions (see above) and may include printed material, photographs, graphs, typewriter copy, line drawings, and newspaper clippings. The item to be transmitted is placed in the transmit carrier which provides a uniform surface for feed rollers that carry the original document through the Telecopier. The transmit carrier is a transparent plastic folder approximately 8 1/2 inches x 15 inches. When material is to be received, the receive carrier is used at the receiving station. This carrier is a transparent sheet of plastic measuring 8 1/2 inches x 15 inches. The purpose of the receive carrier is to give support to the Telecopy Set which is affixed to the carrier. Two sizes of the Telecopy Set were used in this demonstration depending upon the amount of information to be received. The sizes used were 8 1/2 x 11 3/4 and 8 1/2 x 14 3/4. These sets have a piece of carbon paper attached to a piece of white paper. When the transmission is completed, the carbon paper is removed to reveal the facsimile.

C. Input/Output and Machine Capabilities

Input to the Telecopier are pages up to eight and three-fourths inches wide by any length. Only single sheets can be accommodated, and the machine will not transmit pages directly from a book. Photocopies of book pages can be transmitted, however. Input pages can be of any color. Output pages are the same size as input pages; however, the facsimile received on output pages is in black and white with half tones. The Telecopier will not produce colored facsimiles. Up to three carbon copies of a facsimile can be made with each transmission. The Telecopier can transmit most satisfactorily eight-point type or larger. Input pages are scanned at the rate of one hundred lines per minute (resolution for the machine is ninety six lines per inch). Insofar as production speed is concerned, 1.833 inches of a 8 1/4 x 11" sheet of paper can be transmitted per minute. The total transmission time for an 8 1/4 x 11" sheet of paper is six minutes.

D. Communication Requirements For A Transmission Link

The ordinary voice-grade telephone line is all that is necessary to establish a transmission link between stations. As stated above, the transmission link is established when telephone communication between two stations has been made and when the telephone handsets at both stations have been placed in the telephone coupler. Transmission from

the State Library Board was conducted by leased lines (WATS), while 6
transmission from Greenville and Charleston was over standard, non-
leased, voice-grade lines. There was no noticeable difference in the
quality of the telefacsimile received by Greenville and Charleston
from the State Library Board over the WATS line and the facsimiles
received by the State Library Board from these two libraries over the
non-leased lines. Apparently there was no communication interference
on the lines because 87 c/o of the telefacsimile copier were excellent.
In only one case was an illegible telefacsimile received by the three
stations.

OPERATING PROCEDURES

A. Sending

The document to be transmitted is put in the transmit carrier and is placed into the front cover of the Telecopier with the message side up. A telephone call is placed to the receiving party. The answering party is notified that a document is to be sent, and the sending party then presses the SEND button. The telephone handset of both parties is placed into the Telecopier: the machines will automatically start and stop. After the machine has stopped, a check is made with the receiving party for any additional messages. If the call is completed, the OFF button is pressed, and the document is removed from the front cover of the Telecopier (see Appendix III, Page 16).

B. Receiving

The copy set is placed in the receive carrier with the carbon paper on top and is placed in the front of the Telecopier. The RECEIVE button is pressed, and the telephone handset is placed into the Telecopier. The machine will start automatically when the sending party places his telephone handset in the Telecopier. After the information has been relayed, the Telecopier will automatically stop. The receiving operator removes the copy set from the unit and presses the OFF button. The carbon paper is removed to reveal the facsimile of the original document.

COSTS

A. Rent of the Machine

The basic monthly use charge (rent) for each Telecopier machine is thirty-five dollars (\$35.00). In order to establish a Telecopier link-up, it is, of course, necessary to have more than one machine.

B. Operating Fee

In addition to monthly rent, the Xerox Corporation charges an operating fee of two and one-half cents (.025) per operating minute (transmitting or receiving). The minimum operating fee per machine for each month is fifteen dollars (\$15.00), which covers the first 600 operating minutes. All operating time in excess of the first 600 operating minutes per month is at a rate of .025 cents per minute.

C. Supplies

Supplies necessary to operate the Telecopier consist of Xerox Telecopy Sets (paper) and plastic receiver and transmitter carriers.

(a) Telecopier Sets (paper)

The price of this paper according to size is listed below:

- (1) Box containing 300 sets,
8 1/2 x 11 3/4 \$7.64
- (2) Box containing 300 sets,
8 1/2 x 14 3/4 \$8.91

(b) Receiver Carriers

Receiver carriers are obtained in packages of three at \$3.37 per package, and transmitter carriers also come in packages of three for \$4.42. Only one plastic receiver carrier and one plastic transmitter carrier are necessary; however, it is wise to maintain additional ones on hand in the event that one or the other is damaged.

D. Average Cost for a Request and a Reply

The following statistics have been gathered from information concerning expenditures during the three-month experimental demonstration. The figures represent a 3 and 3/5-minute request from Greenville followed by a 6-minute transmission response. Expenditures for employees' salaries are not included; consequently, no cost for reference work or research is calculated in the following expenditures.

(a) Cost for Greenville to send request (3 and 3/5 minutes):

Rental cost of Telecopier	\$.014	(at \$.004 per minute)
Operating cost of Telecopier	\$.065	(at \$.025 per minute)
Telephone cost (non-leased lines	\$1.15	
	<u>\$1.229</u>	Cost for sending request

(b) Cost for State Library Board to receive (3 and 3/5 minutes):

Rental cost of Telecopier	\$.014	
Operating cost of Telecopier	\$.065	
Cost of Telecopy Set	\$.025	(at \$.025 per sheet)
	<u>\$.104</u>	Cost for receiving request

(c) Cost for State Library Board to send reply (6 minutes):

Rental cost of Telecopier	\$.024	
Operating cost of Telecopier	\$.15	
Telephone cost (WATS Line)	\$.90	
	<u>\$1.074</u>	Cost to reply

(d) Cost for Greenville to receive reply (6 minutes):

Rental cost of Telecopier	\$.024
Operating cost of Telecopier	\$.15
Cost of Telecopy Set	\$.025
	\$.199 Cost to receive reply

(e) Total for entire operation involving a 3 and 3/5-minute request and a 6-minute reply:

Total cost to send request	\$1.229
Total cost to receive request	\$.104
Total cost to send reply	\$1.074
Total cost to receive reply	\$.199
	\$2.606 = \$2.61 Grand total cost

E. Projected Cost for One Month's Operation in a Three Library Link-Up

In order to obtain an estimate of the costs of maintaining and using the Telecopier as a means of communication in the State Library Board's Reference and Inter-Library Loan Department, the projected cost study which follows was made based on expenditures encountered in the three-month experimental demonstration. The following projected figures for one month illustrate the expenditures of the Telecopier link-up among the Charleston County Library, Greenville County Library, and the State Library Board. For the purpose of establishing a cost guideline for one month, it is assumed that the libraries operate on a twenty-two workday month and that Charleston and Greenville each average sending one request per day to the State Library Board. Since the ratio of book requests to information requests received during the experimental period was two to one, the projected total of twenty-two requests from both Charleston and Greenville might consist of 14 book requests and 8 information requests. Requested available books are mailed and the requesting library is notified by post card that books are being sent; therefore, the Telecopier is not used for replying to book requests. The State Library Board consequently will use the Telecopier only 16 times to reply to the information requests. The requests from Charleston and Greenville involved using the Telecopier 3 3/5 minutes for each transmission. The replies of the State Library Board will consist of 4 3/4 minutes of operation time. These figures are based on information obtained in the experimental demonstration period concerning average transmission time.

(a) Cost for Charleston to send and receive material:

Monthly rental cost of Telecopier. . .	\$ 35.00
Monthly operating cost of Telecopier .	\$ 15.00
(600 minutes of operating time)	
Cost of Telecopy sets	\$.20
(for receiving 8 replies from SLB)	
Telephone cost (non-leased lines) . .	\$ 29.04 (at \$1.32 for 4 minutes)
Total	\$ 79.24

(b) Cost for Greenville to send and receive material:

Monthly rental cost of Telecopier. . . \$ 35.00
 Monthly operating cost of Telecopier. \$ 15.00
 (600 minutes of operating time)
 Cost of Telecopy Sets \$.20
 (for receiving 8 replies from SLB)
 Telephone cost (non-leased lines) . . \$ 25.30 (at \$1.15 per 4 minutes)
 Total \$ 75.50

(c) Cost for State Library Board to send and receive material:

Monthly rental cost of Telecopier . . \$ 35.00
 Monthly operating cost of Telecopier. \$ 15.00
 (600 minutes of operating time)
 Cost of Telecopy Sets \$ 1.10
 (for receiving 44 requests from
 Charleston and Greenville).
 Telephone cost (WATS Line) \$ 14.40 (at \$.90 for 6 minutes;
 for 16 calls)
 Total \$ 65.50

(d) Total projected cost for one month of a three library link-up:

Total cost for Charleston \$ 79.24
 Total cost for Greenville \$ 75.50
 Total cost for State Library Board . \$ 65.50
 Grand Total . . . \$220.24

The \$15.00 monthly operating cost as discussed on page 6 represents the minimum operating charge and covers the first 600 minutes of machine operation. This time allotment is used both when the library is sending and receiving material. It is highly unlikely in the present referral system in South Carolina that any of the libraries would exceed this 600 minute allotment. Based on the information in the projected study, the Telecopiers in Charleston and Greenville would have a total monthly reading of 117.2 minutes whereas the Telecopier at the State Library Board would have a monthly reading of 234.4 minutes.

EVALUATIONSA. Dependability

During the three-month experimental demonstration, the dependability of the Telecopier machines was judged to be excellent. At no time during transmissions or receptions did any one of the three tested machines break down.

The three machines tested were shipped directly from the factory, and a number of improvements had been made over earlier models. Although there were several occasions when the Telecopiers did not function properly, in each of these cases the fault was with the operator—carrier not properly seated, machine not plugged in, telecoupler unit not plugged into the transmitting unit, or a damaged plastic transmitting carrier was used. Since there were no failures of the equipment during the experimental demonstration, no faults in the mechanical reliability of the Telecopiers can be noted.

B. Facsimile (Copy) Quality

Generally, there was not much variation in the quality of facsimile copy received by the three telecopiers tested. At one time during the test, copy received from one of the libraries was fuzzy; however, a bad telephone connection was suspected as being responsible. Immediately thereafter, another telephone connection was made (telephone connection was broken and another call placed), and the quality of the facsimile received from the same library was excellent. In order to test the full range of reproduction capabilities of the Telecopier a variety of materials was transmitted. The chart on page 20 lists types of materials transmitted over the Telecopier. On that chart the materials are classed according to quality of telefacsimile produced by the machines in a number of extended test transmission periods.

C. Transmission Time

Twenty-five transmission periods which entailed the sending of 20 requests for information and 43 requests for books comprised approximately half of the experimental demonstration. These requests were referred via Telecopier to the State Library Board from Charleston and Greenville in response to inquiries which were made, yet which could not be handled, at the local level. More than one request was sometimes submitted in one transmission period, and frequently, both information and book requests were transmitted at the same time. The average transmission time for all 25 requests was 3 3/5 minutes (three and three-fifths minutes). The chart on page 19 graphically depicts lengths of transmissions. Most of the requests had been typed on reference and interlibrary loan request cards and were then transmitted either individually (if there were no others to be sent at that particular time) or collectively (if other requests were also ready to be sent). The experimental demonstration showed that as many as six request cards could be transmitted at the same time. When as many as ten book and information requests were sent during a transmission period by one of the libraries, the most effective means was found to be simply a typed list of the requested books and information. It was found that by transmitting continuous lines of print (typewritten) rather than transmitting reference and interlibrary loan request cards, considerable time could be saved because speed in scanning by the Telecopier is increased. Printed request cards were used initially in the experimental demonstration because they contain space for bibliographic and verification information. It was found that this information could be easily typewritten along with the listing of author and title, thereby saving scanning time by placing the information in more or less continuous lines of running type. To illustrate this, the compact information contained

in (1) below can be sent in approximately one third the transmission time it takes to send it typed on the postal cards used for regular mail requests as shown in (2) below:

- (1) Clarke, Joan Dorn. Your future as a librarian.
Richards Rosen Press, 1963. Verified in SCLB
reading list for interns.

(2) Interlibrary Loan: For Student Adult BOOK REQUEST
Library: Charleston County Library Date: 6/17/67
Author (full name): Clarke, Joan Dorn
Title: Your future as a librarian
Publisher: Richards Rosen Press Year: 1963

Title verified in: SCLA reading list for interns

 Cannot verify

If not available, substitute:

Because of "dead space" on most cards and forms used for reference and interlibrary loan requests, it is recommended that for Telecopier transmission all requests be typed in running lines of print rather than placed on forms or printed cards.

D. Comparison of Telephone Communication with Telecopier Communication

- It was found that requests for one title or for information which could be stated briefly and clearly, the direct telephone (voice-grade) is less time consuming and more economical. After this number, however, the Telecopier can save time and the possibility of error is greatly reduced. In direct telephone communication, the information requested by a library must be recorded by the library receiving the request; however, the Telecopier provides a facsimile of the typed request, thereby saving time and reducing error. Multiple requests can thus be transmitted via Telecopier much faster and much more accurately. The greater the quantity of requests, the more effective and efficient the Telecopier becomes as a means of communication. Requests which trickle in one at a time at irregular intervals (either urgent or regular) can more economically and more easily be sent through the mail or by ordinary commercial telephone than by Telecopier. Thus the Telecopier is recommended over the telephone only in a situation where the number of requests from one library to a headquarters of referral center is of considerable volume.

CONCLUSIONS

After careful and detailed study of the use made of the Xerox Magnavox Telecopier during the three month demonstration, the following conclusions relative to the use of the Telecopier in the Reference and Interlibrary Loan Department of the State Library Board are listed:

- a. Insofar as operating characteristics are concerned, the machine is very simple to operate. Technical operation of the machine is such that the average library clerical worker can send and receive messages without difficulty. The machine's portability and compactness allow it to be used at any location where a telephone is accessible. The noise level of the machine during operation is comparable to that of a mechanical or electric typewriter and is not deemed to be of sufficient intensity to distract library personnel.
- b. Transmission time for the average request and reply during the experimental demonstration proved to be rapid. The minimum operating time per month for each machine has been set at 600 minutes by the Xerox Corporation, and the volume of telefacsimile communication accomplished during any one-month period was not considerable. No operating station exceeded that amount in any one-month period.
- c. Based on the volume of telefacsimile communication accomplished during the experimental demonstration, the cost is excessive. It is felt that in this reference and interlibrary loan referral service provided for the public libraries of the state that telephone communication alone would be much more economical for handling urgent requests. The time delay in ordinary mail communications for reference and interlibrary loan transactions is not considered to be a great inconvenience to the libraries' clientele. While communication with the Telecopier allows the libraries' clientele to receive books a minimum of one day earlier, the expense incurred in maintaining and operating the machines is not justified. The ordinary voice telephone can be used at a fraction of the expense incurred by the Telecopier in handling those requests deemed to be urgent.
- d. In view of the nature of requests received during the experimental demonstration and of the relatively infrequent use made of the Telecopier by the two participating libraries, it is felt that both library personnel and library clientele of the state are not ready for this advanced system of communication.
- e. The maintenance of a Telecopier network would represent a considerable outlay of funds. Although the tested machines proved very satisfactory as devices for telefacsimile communication, in the present state-wide referral system for information and interlibrary loans a Telecopier network is not needed. In proposed regional reference resource centers for the state of South Carolina (see map, Appendix VI), some type of telefacsimile communication among these libraries, including the State Library Board, will undoubtedly be needed. A Telecopier network might

prove to be a solution to the communication needs of the state's reference resource centers; however, at that time the use made of Telecopiers might not justify the high cost of a network system if the present rental rate and operating rate is not decreased. If rental and operating costs of the Telecopiers are reduced because of greater popularity and distribution of the machine and if leased telephone lines (such as the WATS line used by the State Library Board) can be established for communication among the regional resource centers, overall operating costs of Telecopiers might then be within reason.

PENDIX I - OPERATING POLICY

OPERATING POLICY FOR THE XEROX MAGNAVOX TELECOPIER DURING EXPERIMENTAL DEMONSTRATION

General

- A. Immediately after the Xerox Magnavox Telecopiers have been installed in the State Library Board and in the Charleston and Greenville County Libraries, a three-month experimental demonstration will be conducted. The experimental demonstration will provide an opportunity for evaluating the effectiveness of facsimile communication involving the transmission of exact copies of anything printed, drawn, written, typed, or photocopied.
- B. A major factor in resolving to install the new equipment on an experimental basis was the inherent capability of the new machines to reduce verbal error in the transmission of both request and answers to inquiries. The elimination of transmission errors is of primary significance to business and industry.
- C. It is hoped that information service for local business, technical and scientific interests can be enhanced by the rapid transmission capability of the Xerox Magnavox Telecopier.
- D. In making use of the Telecopier during the experimental demonstration, keep in mind that the State Library Board's Reference and Interlibrary Loan Service is an in-depth service standing behind the resources of your library system. The Telecopier should be used only to obtain information or materials needed by adults for a serious purpose and not available locally.

When to Use the Telecopier

- A. Use the Telcopier to enhance rapid reference and interlibrary loan service to business and industry and to scientific and technical interests of your city and county.
- B. Use the Telecopier when your patron is in immediate need of information contained on a particular page of a book, document, or other publication not owned by your library.
- C. Use the Telecopier for obtaining a brief article (one to three pages) in a magazine or journal not owned by your library, yet needed as soon as possible by an adult patron involved in research or study.
- D. Use the Telecopier for requesting non-fiction books on interlibrary loan which are needed immediately by your patron.
- E. Use the Telecopier if an urgent request requires an answer involving detailed statistics, graphs, charts, diagrams, etc.

APPENDIX I - (continued)

When Not to Use the Telecopier

- A. Do not use the Telecopier for transmitting requests for information or for books which are not urgently needed. These requests can be forwarded through the mail, and will be filled in accord with regular interlibrary loan procedures.
- B. Do not use the Telecopier for students, including elementary, high school, and college.
- C. Do not submit book requests for fiction titles over the Telecopier.
- D. Do not use the Telecopier for requesting book renewals. Use a postal card for these requests. Send the card through the mail.
- E. Do not use the Telecopier for transmitting a long list of books (bibliography) brought to the library by a patron who would like to obtain the volumes on interlibrary loan. Books needed and listed on bibliographies of this nature should be verified and listed on individual book request cards, then consolidated and mailed together to the State Library Board.
- F. Do not use the Telecopier to notify the State Library Board that interlibrary loan books are being returned.
- G. Do not use the Telecopier to obtain reproductions of pages in books and periodicals which are in your collection.

Operation of the Telecopier

- A. In order to facilitate smooth operation of facsimile communication over the Telecopier, the following operating time schedules must be followed (Monday-Friday):
 1. Charleston County Library
 - Morning - 10 a.m. - 11 a.m.
 - Afternoon - 2 p.m. - 3 p.m.
 2. Greenville County Library
 - Morning - 11 a.m. - 12 a.m.
 - Afternoon - 3 p.m. - 4 p.m.
- B. Operation of the Telecopier involves only a few simple steps. When a request is transmitted, the reference librarian should use the regular reference or interlibrary loan request card. Several request cards can be transmitted at the same time. The card or cards are inserted into the machine and the "send" button is pressed. After then dialing the State Library Board's Reference and Interlibrary Loan Service (TELEPHONE NUMBER: Area Code 803, 758-3138), the telephone is placed into the telecoupler, and the State Library Board will set its machine in motion by pressing the "receive" button. A facsimile of the request card or cards will then be produced by the Telecopier at the State Library Board.

APPENDIX I - (continued)

- C. Upon receipt of the facsimile of your request or requests at the State Library Board, the inquiry will be processed and answered as quickly as possible. If your request is for a book, and the needed book is available in the State Library Board's inter-library loan collection, the book will be packaged immediately and placed in the mail. If information is requested, members of the reference staff will begin immediately to process the inquiry, and every attempt will be made to transmit a reply within the designated transmitting period for your library. Should the answer not be located within the designated period, a reply will be sent during the next transmitting period.
- D. A facsimile of a page or pages from a book, a periodical, document, or pamphlet can be transmitted over the Telecopier in response to an inquiry. Statistical charts, graphs, diagrams, sketches, plans, photographs, etc., might also be sent in answer to inquiries. Answers to some inquiries might be obtained from a number of sources. In that event, a documented resume of facts will be compiled and typed. A facsimile of the typed answer will then be transmitted to your library over the Telecopier.
- E. When the machines are installed, a representative of the Xerox Corporation will provide operating instructions for reference librarians.
- F. During the three-month experimental demonstration, only reference librarians should operate the machines in order to make a complete and fair evaluation of the Telecopier's capabilities and usefulness for reference and interlibrary loan purposes.
- G. Copies of an instruction sheet graphically depicting the major steps to be followed in making a request are being sent to your library. Steps one through four illustrated on these sheets represent important preliminaries, and they should be followed carefully prior to transmitting any request.

Evaluation of the Telecopier

- A. Evaluation forms have been prepared by this agency for use during the experimental demonstration. A separate form must be completed for each request. At the end of each week of the experimental demonstration, evaluation forms for all requests handled during the week should be collected and mailed together to the Reference and Interlibrary Loan Service of the State Library Board. Completed evaluation forms will provide this agency with needed data concerning the effectiveness of facsimile transmission communication over the Telecopier.
- B. The experimental demonstration is expected to continue until about the middle of July, 1967. Reference librarians are requested to prepare a thorough report of the experimental demonstration with the Telecopier. The report should be forwarded to the State Library Board not later than July 1, 1967.

APPENDIX D - EVALUATION SHEET

S. C. State Library Board
1001 Main Street
Columbia, South Carolina

EXPERIMENTAL DEMONSTRATION WITH FACSIMILE TRANSMISSION MACHINES

EVALUATION OF TELECOPIER SERVICE

LIBRARY: _____

REQUEST WAS SUBMITTED TO THE STATE LIBRARY BOARD

DATE: _____

TIME: _____

REPLY WAS RECEIVED TO REQUEST ON
(if book request, list when
book arrived at the library)

DATE: _____

TIME: _____

REQUEST MADE TO STATE LIBRARY BOARD WAS FOR
(check appropriate square or squares):

- | | |
|---|--|
| ☐ Book or books | ☐ Periodical article |
| ☐ Chart or graph | ☐ Journal or serial article |
| ☐ Photograph | ☐ Bibliographic information |
| ☐ Statistics | ☐ Other (specify below): |
| ☐ Map | _____ |
| ☐ Drawing or diagram | _____ |

THE REQUEST MADE BY YOUR PATRON
WAS FOR (Check one):

- ☐ Specific book, pamphlet, or document
- ☐ Specific fact or facts
- ☐ Information on a particular subject
- ☐ Specific poem, article, essay, dissertation, play, quotation or address.
- ☐ Other (specify below):

BOOK OR INFORMATION NEEDED WAS FOR THE
FOLLOWING PURPOSE (Check one):

- ☐ Business or professional purposes
- ☐ Research or study
- ☐ Personal use
- ☐ Club program or meeting
- ☐ Other (specify below):

IF THE REQUEST WAS FOR INFORMATION,
HOW MANY FACSIMILE PAGES DID YOU RECEIVE IN REPLY (Specify
to nearest fraction of page):

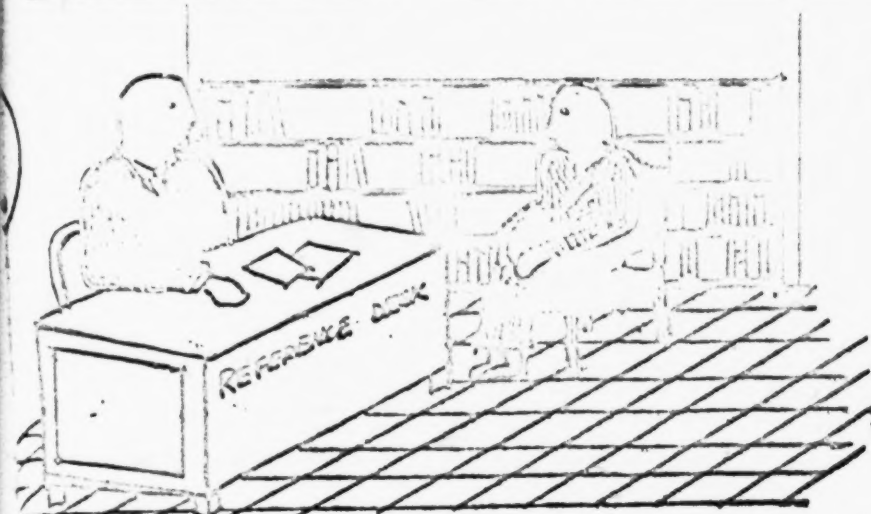
IN THE SPACE PROVIDED BELOW STATE THE EXACT REQUEST:

THE QUALITY OF THE FACSIMILE RECEIVED OVER THE TELECOPIER WAS (Check one):

- ☐ Excellent ☐ Good ☐ Fair ☐ Poor ☐ Completely illegible

DID YOUR PATRON RECEIVE THE BOOK OR INFORMATION NEEDED? YES NO

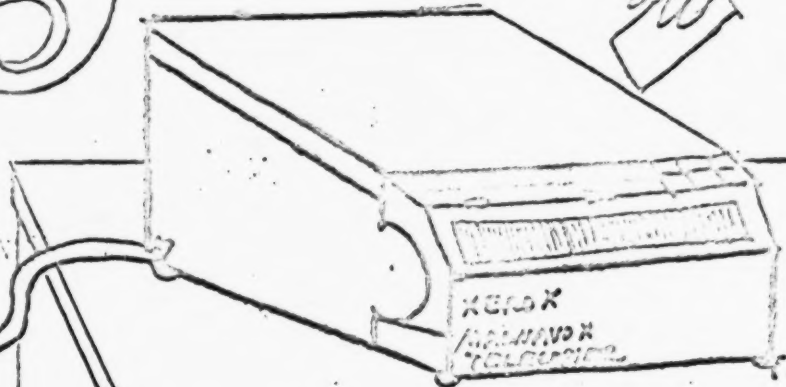
STEPS TO TAKE IN MAKING USE OF THE XEROX MAGNAVOX TELECOPIER FOR FACSIMILE TRANSMISSION



INTERVIEW THE PATRON

Determine exact nature of the request.
Find out from patron exactly what is needed.
Obtain any necessary bibliographic information.

5

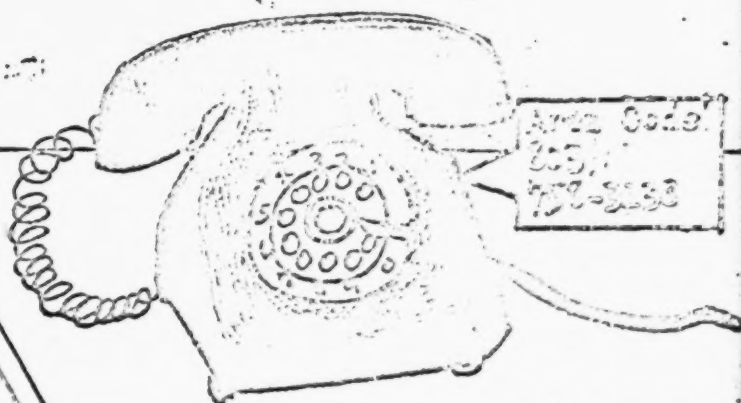


PLACE THE REQUEST CARD INSIDE THE XEROX MAGNAVOX TELECOPIER



SEARCH CARD CATALOG AND OTHER FILES TO DETERMINE NEEDED INFORMATION IS YOUR LOCAL LIBRARY

6

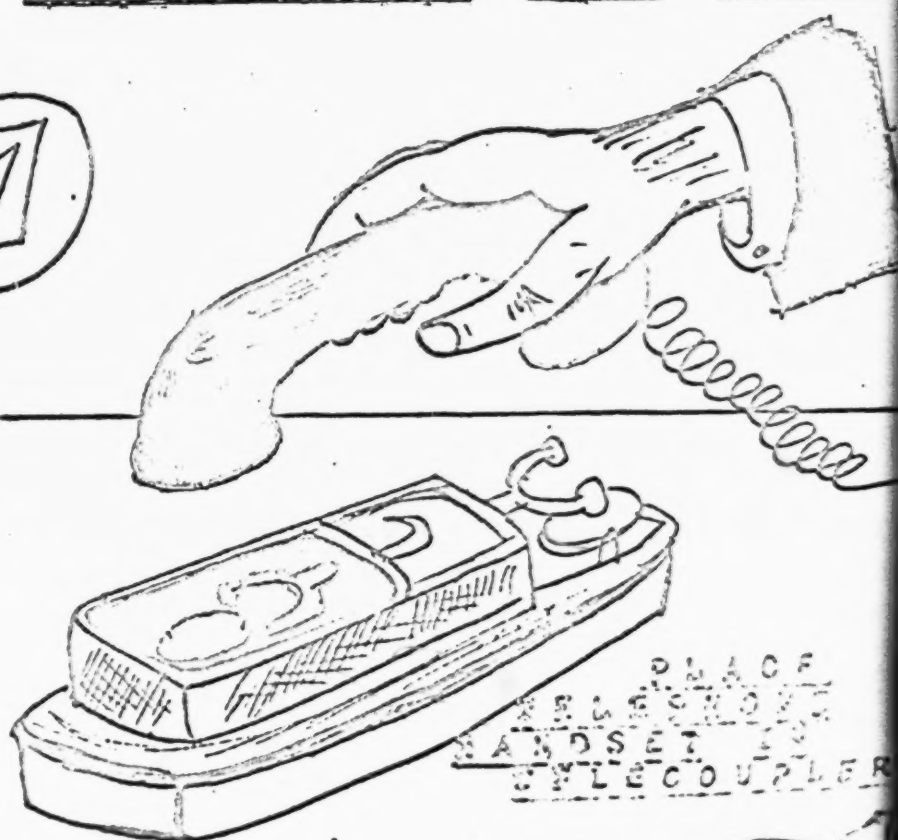


DIAL THE STATE LIBRARY BOARD'S REFERENCE AND INTERLIBRARY LOAN SERVICE



WASH FROM YOUR TOOLS COMPLETE BIBLIOGRAPHIC INFORMATION

7



PLACE OF XEROX MAGNAVOX TELECOPIER

APPENDIX D - EVALUATION SHEET

S. C. State Library Board
1001 Main Street
Columbia, South Carolina

EXPERIMENTAL DEMONSTRATION WITH FACSIMILE TRANSMISSION MACHINES

EVALUATION OF TELECOPIER SERVICE		LIBRARY:													
QUEST WAS SUBMITTED TO THE STATE LIBRARY BOARD DATE: _____ TIME: _____ QUEST MADE TO STATE LIBRARY BOARD WAS FOR (check appropriate square or squares): <table border="0"> <tr> <td>☐ Book or books</td> <td>☐ Periodical article</td> </tr> <tr> <td>☐ Chart or graph</td> <td>☐ Journal or serial article</td> </tr> <tr> <td>☐ Photograph</td> <td>☐ Bibliographic information</td> </tr> <tr> <td>☐ Statistics</td> <td>☐ Other (specify below):</td> </tr> <tr> <td>☐ Map</td> <td></td> </tr> <tr> <td>☐ Drawing or diagram</td> <td></td> </tr> </table>		☐ Book or books	☐ Periodical article	☐ Chart or graph	☐ Journal or serial article	☐ Photograph	☐ Bibliographic information	☐ Statistics	☐ Other (specify below):	☐ Map		☐ Drawing or diagram		REPLY WAS RECEIVED TO REQUEST ON (if book request, list when book arrived at the library) DATE: _____ TIME: _____ THE REQUEST MADE BY YOUR PATRON WAS FOR (Check one): ☐ Specific book, pamphlet, or document ☐ Specific fact or facts ☐ Information on a particular subject ☐ Specific poem, article, essay, dissertation, play, quotation or address. ☐ Other (specify below):	
☐ Book or books	☐ Periodical article														
☐ Chart or graph	☐ Journal or serial article														
☐ Photograph	☐ Bibliographic information														
☐ Statistics	☐ Other (specify below):														
☐ Map															
☐ Drawing or diagram															
WORK OR INFORMATION NEEDED WAS FOR THE FOLLOWING PURPOSE (Check one): ☐ Business or professional purposes ☐ Research or study ☐ Personal use ☐ Club program or meeting ☐ Other (specify below):															
		IF THE REQUEST WAS FOR INFORMATION, HOW MANY FACSIMILE PAGES DID YOU RECEIVE IN REPLY (Specify to nearest fraction of page):													

BOOK OR INFORMATION NEEDED WAS FOR THE FOLLOWING PURPOSE (Check one):

- ☐ Business or professional purposes
☐ Research or study
☐ Personal use
☐ Club program or meeting
☐ Other (specify below):

IF THE REQUEST WAS FOR INFORMATION, HOW MANY FACSIMILE PAGES DID YOU RECEIVE IN REPLY (Specify to nearest fraction of page):

IN THE SPACE PROVIDED BELOW STATE THE EXACT REQUEST:

THE QUALITY OF THE FACSIMILE RECEIVED OVER THE TELECOPIER WAS (Check one):

☒ Excellent ☐ Good ☐ Fair ☐ Poor ☐ Completely illegible

DID YOUR PATRON RECEIVE THE BOOK OR INFORMATION NEEDED? YES ☐ NO ☐

IF PATRON WAS NOT SATISFIED WITH THE BOOK OR INFORMATION RECEIVED, STATE REASON FOR DISSATISFACTION ON REVERSE SIDE OF THIS FORM, ALSO LIST ANY ADDITIONAL COMMENTS REGARDING THIS PARTICULAR REQUEST (How well request was answered, patron's reaction, or other pertinent remarks):

DID YOU CHARGE THE PATRON FOR THIS SERVICE? YES ☐ NO ☐ AMOUNT PER PAGE

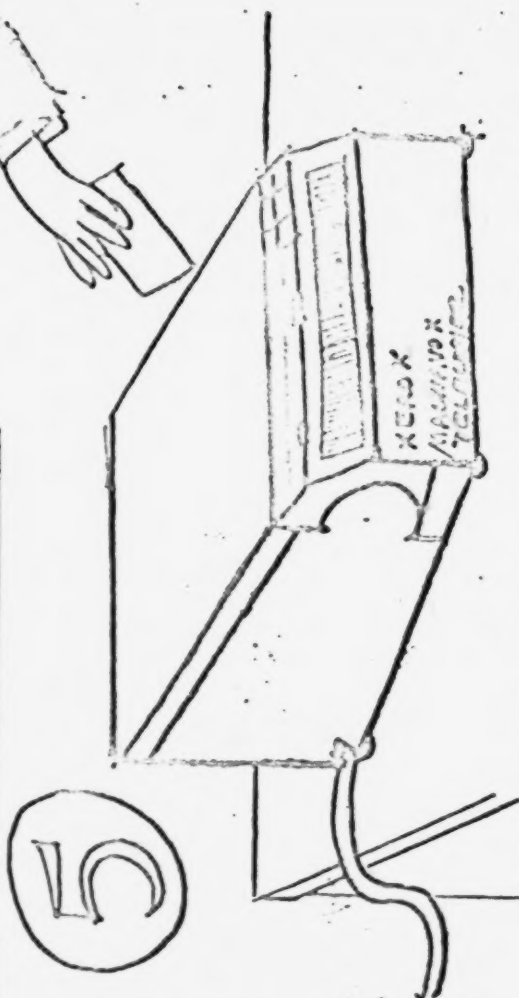
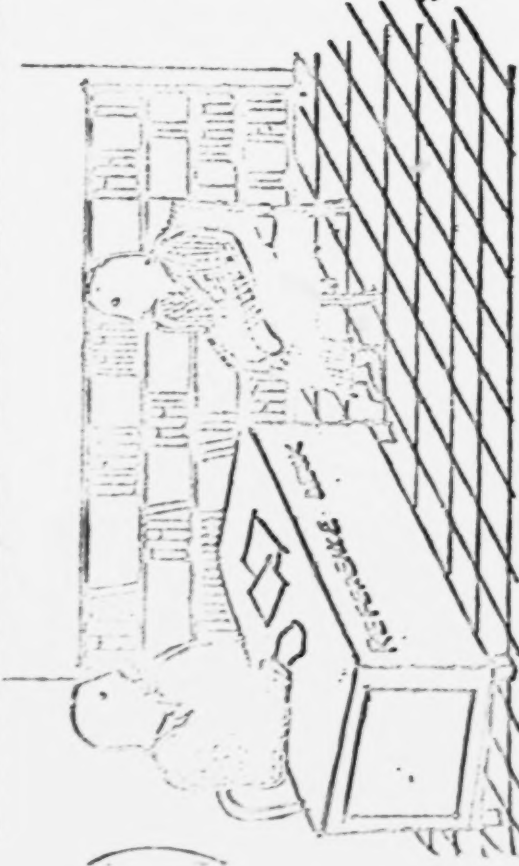
SIGNATURE OF REF. LIBRARIAN 

ORDERING OPERATION STEPS

S. C. State Library Board

STEPS TO TAKE IN MAKING USE OF THE XEROX MAGNAVOX

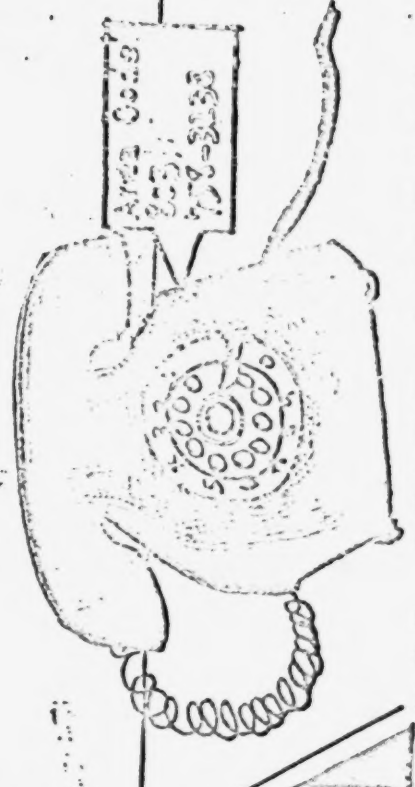
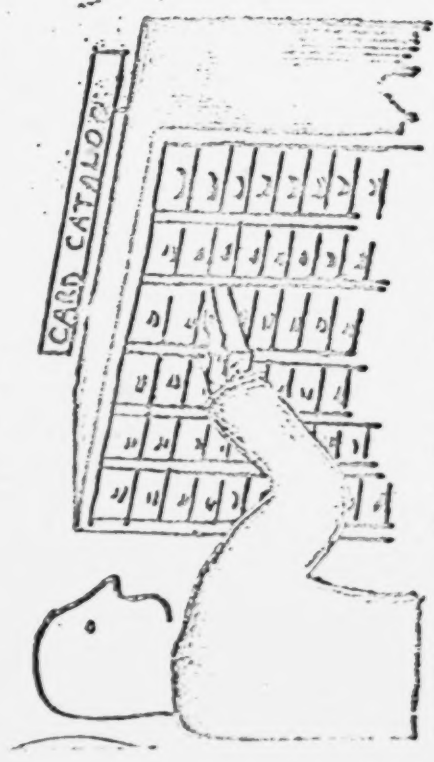
TELECOPIER FOR FACSIMILE TRANSMISSION



INTERVIEW THE PATRON

Determine exact nature of the request.
Find out from patron exactly what is needed.
Obtain any necessary bibliographic information.

PLACE THE REQUEST CARD
INSIDE THE XEROX
MAGNAVOX TELECOPIER



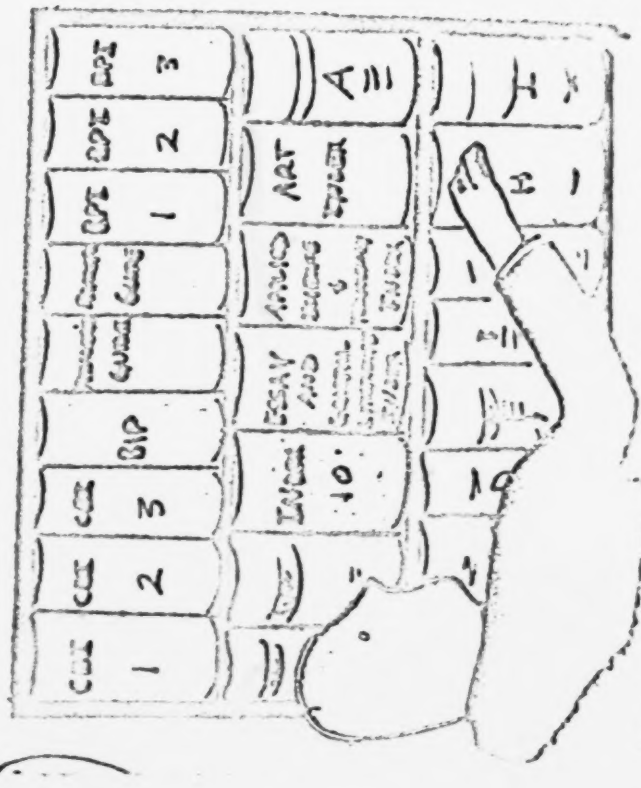
SEARCH CARD CATALOG AND
ENTER FILES TO DETERMINE
WHERE FILED INFORMATION IS
YOUR LOCAL LIBRARY

DIAL THE STATE LIBRARY
BOARD'S REFERENCE AND
INTERLIBRARY LOAN SERVICE

CUT	CUT	CUT	CUT	CUT	CUT	CUT	CUT
1	2	3	3IP	1	2	3	3



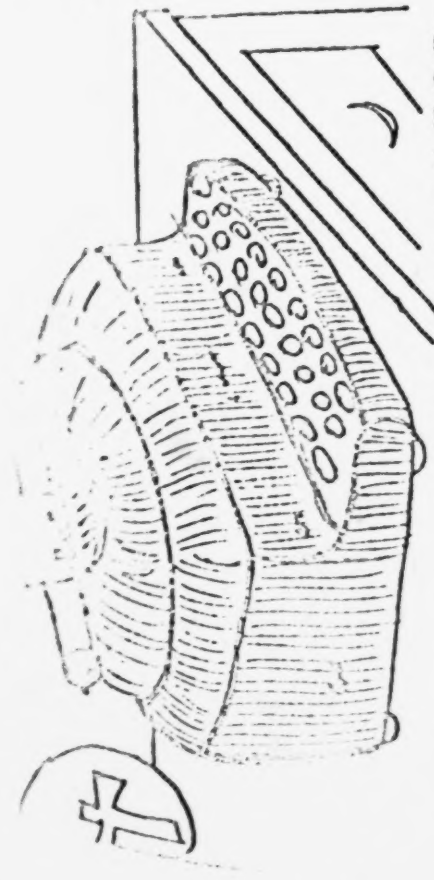
SEARCH CARDS, CATALOG AND
INDEXES TO DETERMINE
WHERE THE INFORMATION IS
NEED. LOCAL LIBRARY



7

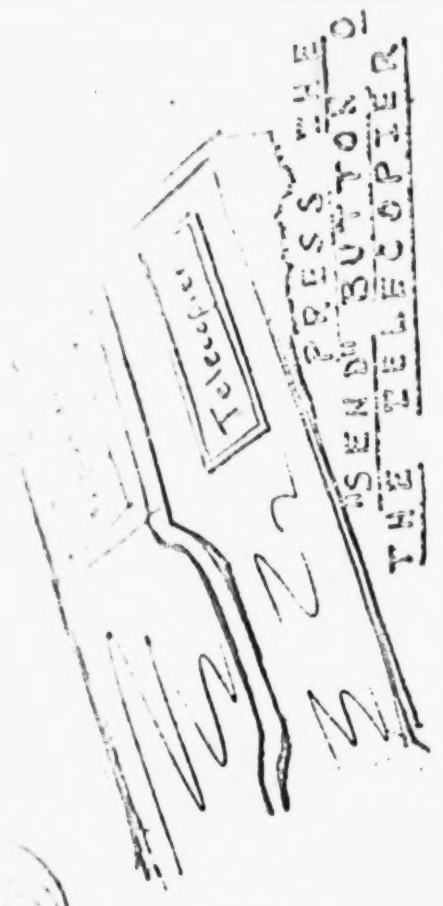


DIAL THE STAFF LEBRARY
BOARD'S REFERENCE
INTERLIBRARY LOAN
SERVIZ



7

TYPE THE BOOK OR INFOR-
MATION REQUEST ON A
REGULAR REQUEST CARD



USE THE TELETYPE
PRESS THE
SEND BUTTON

APPENDIX IV

GRAPH SHOWING LENGTH OF TRANSMISSIONS FROM CHARLESTON AND GREENVILLE*

Note: Transmissions were for both books and for information

Key: G=Greenville; C=Charleston; B=Books; I=Information

REQUESTS LISTED BY DATES SHOWING LIBRARY	NUMBER OF TRANSMISSION MINUTES											
	$\frac{1}{4}$	1	$\frac{1}{2}$	2	$\frac{3}{4}$	3	$\frac{3}{4}$	4	$\frac{5}{4}$	5	$\frac{5}{4}$	6
G Apr 18; 1(I)												
C Apr 27; 1(I)												
C Apr 27; 1(I)												
3(B)												
C Apr 27; 1(I)												
C Apr 27; 1(I)												
C Apr 28; 1(I)												
C May 18; 1(I)												
2(B)												
C May 18; 1(I)												
G May 18; 1(I)												
C May 19; 1(I)												
C May 19; 1(B)												
C May 24; 1(I)												
C May 25; 1(I)												
C May 30; 1(B)												
C Jun 5; 1(I)												
C Jun 7; 1(I)												
C Jun 9; 2(B)												
G Jun 20; 10(B)												
G Jun 22; 2(B)												
G Jun 28; 1(I)												
4(B)												
G Jun 28; 1(I)												
4(B)												
G Jun 28; 4(B)												
G Jun 30; 1(I)												
2(B)												
G Jul 13; 3(I)												
4(B)												
G Jul 17; 4(B)												

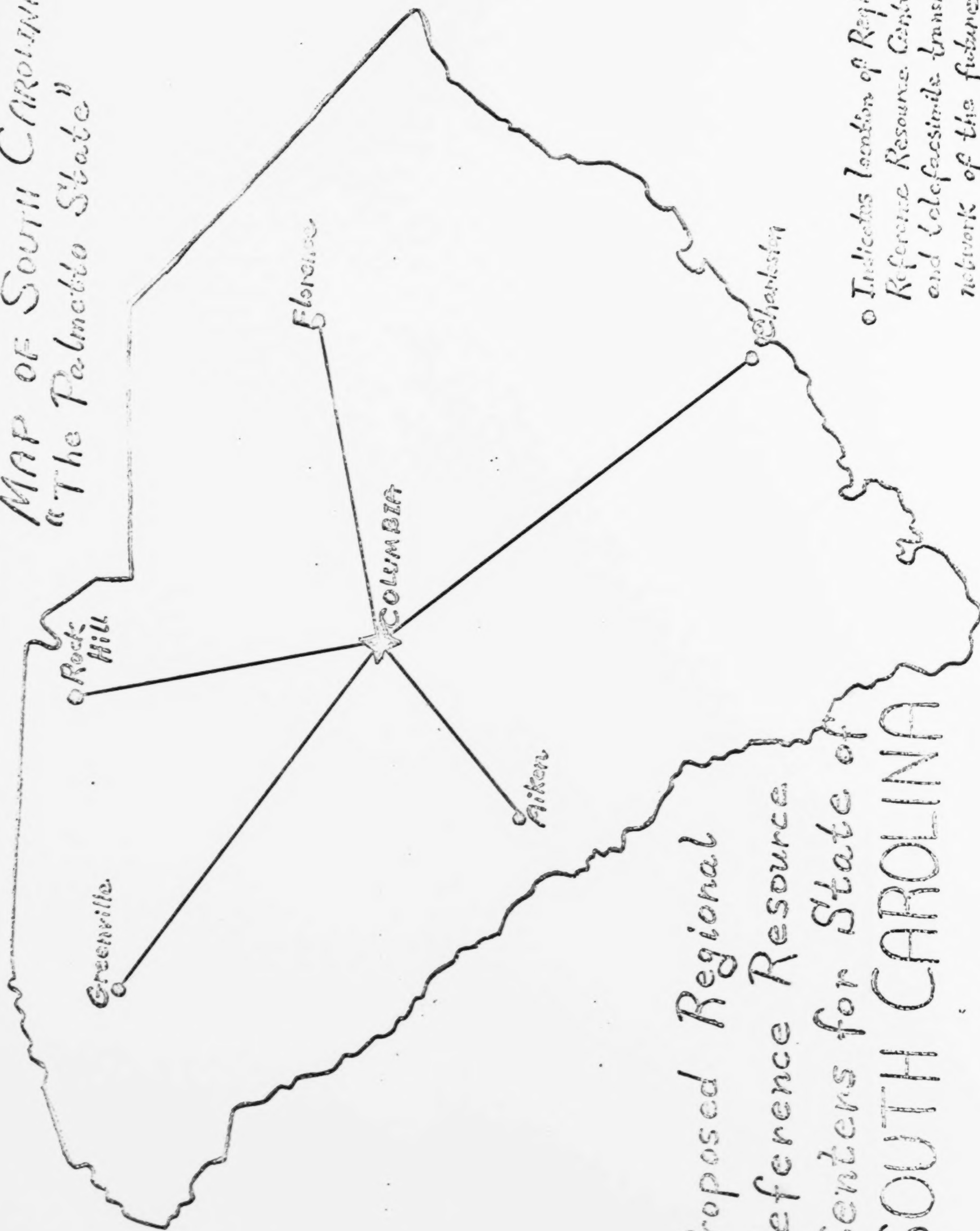
Does not include test transmissions of various materials.

APPENDIX V

LIST OF TYPES OF MATERIALS TRANSMITTED OVER THE TELECOPIER CLASSIFIED
ACCORDING TO QUALITY OF TELEFACSIMILE

VARIOUS QUALITIES OF TELEFACSIMILIES			
Excellent copies	Good copies (legible)	Fair copies (fuzzy)	Poor copies (illegible)
Printed material with 8-point type and larger	Printed material of 6-point to 8-point type faces	Printed materials of smaller than 6-point type	Printed materials of smaller than 4-point type
Line drawings (printed)	Second sheets of typed carbon copies	Colored printing with a fair degree of contrast	Weak Xerox or other photocopied material
Typed materials (elite & pica)	Average colored photograph	Catalog cards	Colored printing lacking contrast
Black & white photographs	Xerox copies and other photocopied material of good quality	Xerox copies and other photocopied material of average quality	Photographs lacking contrast
Newspaper clippings			Faded materials (manuscripts, newsprint, printing, etc.)
First sheets of typed carbon copy	Interlibrary loan and reference request cards used by State Library Board for transactions		
Charts & graphs (printed)	Handwritten material (pencil)		
Colored printing with better than average contrast	Colored maps having good contrast		
Maps printed in black and white & halftones			
Handwritten material (pen & ink and ball point pen)	Sketches or drawings (pencil)		
Sketches or drawings done with pen and ink			
Printed forms			
Mimeographed materials			

MAP OF SOUTH CAROLINA "The Palmetto State"



MEMORANDUM

TO: Public Librarians

FROM: Estellene P. Walker, Director

SUBJECT: Experimental Demonstration with the Xerox Telecopier

DATE: April 11, 1967

In an electronic era which challenges libraries to re-think their functions and re-design their operations, librarians have had to examine many new devices of automation in order to meet the fast-paced requirements of the "information explosion." One such device is the Xerox Magnavox Telecopier, an innovation for facsimile transmission communications. It shows promise of having wide application in a reference and information referral system such as the State Library Board's Reference and Interlibrary Loan Service.

The Telecopier's capability for reducing errors and the speed with which it transmits documents should represent a very significant step forward toward improving library service to business, industrial, technical, and scientific interest in your area. The machine is both a transmitter and a receiver. It will allow the transmission of urgent information requests and book requests to the State Library Board. Consequently, it will facilitate a speedy, almost instant, reply to your inquiries.

In order to test the effectiveness of the Telecopier as a piece of hardware for improving both the speed and quality of reference service on a statewide basis, a three-month experimental demonstration will be conducted with machines installed at the State Library Board, the Charleston County Library, and the Greenville County Library. Use of the Telecopier as a transmitting device for information requests and replies requiring urgency, accuracy, and convenience will be thoroughly tested during the three-month period.

Copies of an operating policy for the Telecopier, along with instruction sheets and evaluation forms, are being sent to your library. This material outlines in detail the procedures and policies regarding operation of the new machines during the experimental demonstration. We urge you and your staff to read it carefully, and we suggest that you post a copy of it near the Telecopier installed in your library for immediate reference. In order to make a fair evaluation of the Telecopier, it is imperative that your library comply with the operating policy. We also seek your cooperation in providing this agency with evaluative reports of the Telecopier's performance, which are needed as a part of this project.